REMARKS

Applicant respectfully requests reconsideration.

Claims 1, 2, 115-122, 124, 130-156 and 161-177 were previously pending in this application. Claims 1-177 are now cancelled without prejudice or disclaimer. Applicant reserves the right to pursue the subject matter of the cancelled claims in one or more continuing applications. New claims 178-181 are added. Support for these new claims can be found in the specification at least on page 16 line 31-page 17 line 25, page 30 lines 6-10 and 28-31, page 31 line 32, page 36 lines 23-28, page 37 lines 18-23, page 38 lines 25-27, page 45 lines 18-22, page 46 lines 23-25, page 46 line 29-page 47 line 2, page 70 lines 17-23, page 72 lines 8-12, page 73 lines 8-10, page 75 lines 29-30, page 76 lines 1-2, page 81 lines 23-29, page 107 lines 8-12 and page 123 line 9-page 124 line 13. No new matter has been added.

As a result, claims 178-181 are pending for examination with claims 178 and 179 being independent claims.

Rejection under 35 U.S.C. §112, enablement

Claims 1, 2, 115-122, 124, 130-156 and 161-177 are rejected under 35 U.S.C. § 112, first paragraph, enablement. Without conceding the rejection, and rather in the interest of expediting prosecution, Applicant has cancelled all the rejected claims and introduced new claims 178-181.

The Examiner states that the breadth of the previously pending claims was so disparate and broad to require a high degree of experimentation. Applicant strongly disagrees. However in a good faith effort to move prosecution forward, Applicant has presented new claims that are directed to analysis of labeled unit specific markers bound to a nucleic acid and that give rise to electromagnetic radiation signals such as fluorescent signals.

The Examiner recites a number of bases for finding the claims not enabled, and these relate to intrinsic labeling of amino acids, extrinsic labeling of individual units of a polymer, alleged unpredictability regarding FRET based signal detection, alleged unpredictability regarding nanopore sequencing involving ion conductance, and detection of signal from less than all linked units in the polymer. Applicant submits that the new claims presented herewith address each of these bases of rejection.

The new claims recite nucleic acids and therefore the Examiner's rationale for rejecting the claims relating to labeling of amino acids is no longer relevant.

The new claims further recite fluorescent signal (claims 178 and 180) or electromagnetic radiation signal (claims 179 and 181) in the absence of fluorescence resonance energy transfer. In view of these limitations, the teachings of Chan (Mutation Research, 2005, 573, p13-40), Rhee et al. (Trends Biotechnology, 2006, 24, p580-586), and Braslavsky et al. (Proc Natl Acad Sci USA, 2003, 100, p3690-3694) are also rendered moot. The Examiner relies on Chan and Rhee et al. for teachings relating to nanopore sequencing. As described in both references, nanopore sequencing is a method of sequencing that relies on detection of change in ion conductance as a nucleic acid moves through a nanopore that connects two reservoirs of ionic solutions. The signals detected in nanopore sequencing, as described by Chan and Rhee et al., are not fluorescent signals nor are they electromagnetic radiation signals, as now recited in the pending claims. As a result, the teaching of these references is not relevant to the pending claims. The Examiner relies on Braslavsky et al. for a teaching relating to single pair FRET (spFRET). The pending claims exclude the occurrence of FRET from the claimed method. The fluorescent signal and the electromagnetic radiation signals, as recited in the claims, are generated in the absence of fluorescence energy transfer between fluorophores. Thus the teaching of this reference also is not relevant to the pending claims.

Based on the teachings of Chan, the Examiner further states that the claims are not enabled because the specification does not describe the fabrication of a device for performing the method, citing Application of Ghiron as support. Application of Ghiron, 442 F.2d 985 (CCPA, 1971). First Applicant wishes to clarify that the Court in Ghiron stated that the specification at issue did not *specify* a particular apparatus for carrying out the claimed method; the Court did not require that the specification describe the *fabrication* of such apparatus. Second Applicant submits that the instant specification sufficiently describes an apparatus that can be used to perform the claimed methods. This is evidenced by the apparatuses claimed in US 6355420. (See claims 33-48.) To the extent the Examiner's basis however rests on the teachings of Chan as they relate to nanopore sequencing systems, this too should be moot as the claimed methods are not nanopore sequencing methods, as discussed above.

The new claims further recite the use of unit specific markers that are bound to a nucleic acid and that are themselves labeled so as to give rise to fluorescent signals (claims 178 and 180) or electromagnetic radiation signals (claims 179 and 181). The claims do not require simultaneous labeling of adjacent individual nucleotides of the nucleic acid, and thus there is no steric hindrance between adjacent nucleotides.

In view of the foregoing, Applicant maintains that undue experimentation is not required for one of ordinary skill in the art to practice the claimed invention.

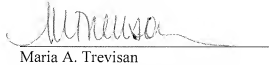
Reconsideration and withdrawal of the rejection is respectfully requested.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,



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